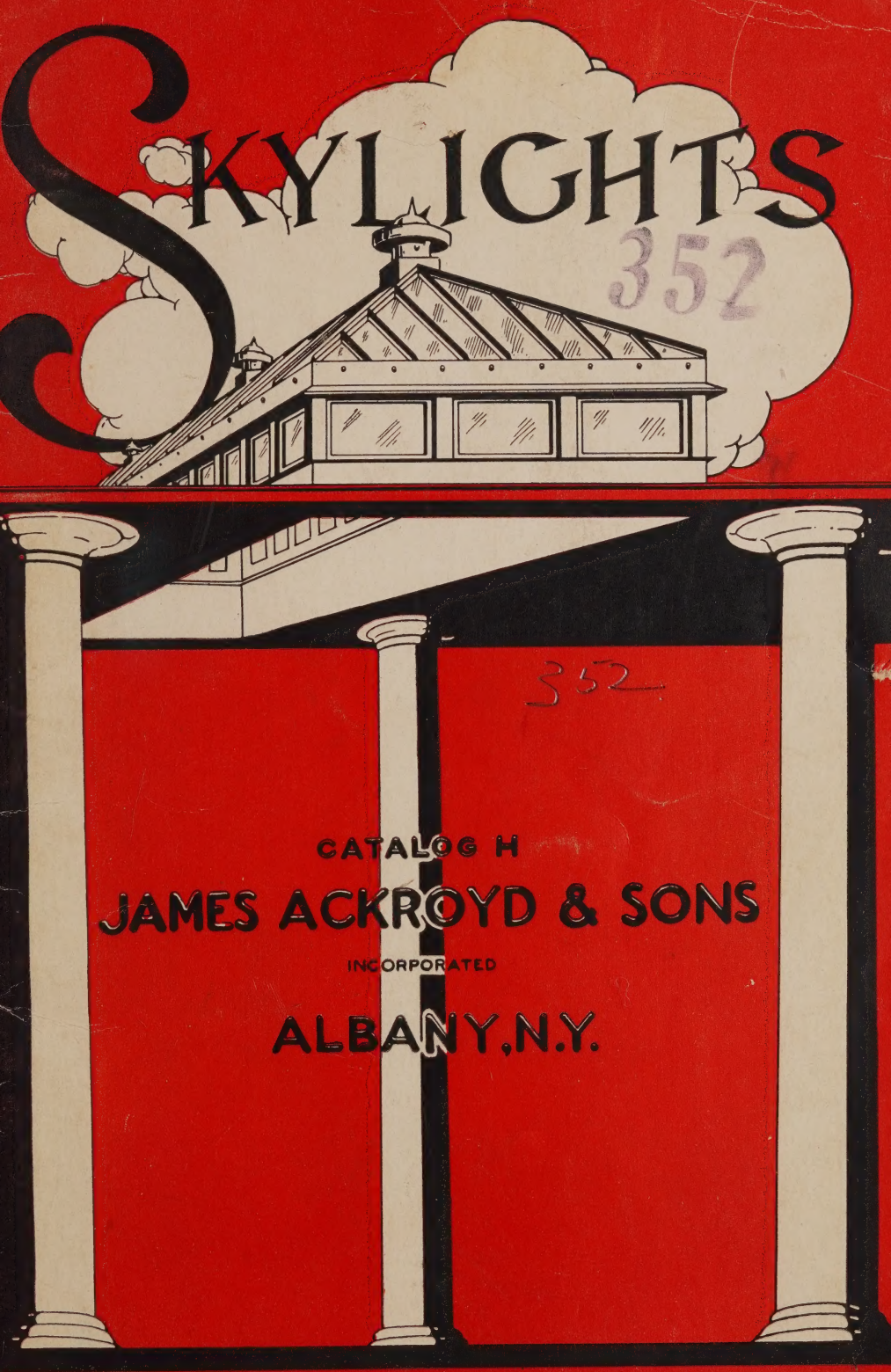
SKYLIGHTS

352

352

CATALOG H

JAMES ACKROYD & SONS

INCORPORATED

ALBANY, N.Y.

JAMES ACKROYD & SONS

(Incorporated)

Manufacturers of

Skylights, Marquees Sash Operators

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ALBANY, N. Y., U. S. A.

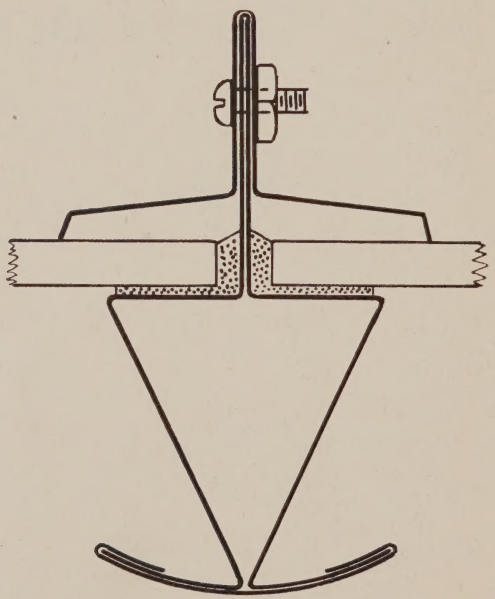
AT
7340
J231
1920

CONSTRUCTION

THE frames and bars of our sheet metal skylights are made of galvanized Ingot iron or copper as desired.

Gauges

For skylights smaller than four feet by six feet.
No. 26 Gauge, Ingot Iron.
14 oz. Hard Copper.
For skylights larger than four feet by six feet.
No. 24 Gauge, Ingot Iron.
16 oz. Hard Copper.



Type A

THE STANDARD BAR FOR ORDINARY SKYLIGHTS

Pitch

Unless otherwise desired, our skylights are made one-quarter pitch; that is, six inches rise to twelve inches run.

General Our Skylights are formed with double condensation gutters on each rafter, discharging into a condensation gutter formed on the curb member or eave of the skylight and carried entirely around the skylight frame. This also applies to the ends of gable skylights. This lower gutter empties through drainage tubes $\frac{5}{8}$ inch in diameter, one placed under each light of glass.

All cross bars are formed with similar condensation gutters which drain into the main rafters with which they connect.

All condensation gutters have bottom caps tightly rolled or drawn on the main bar.

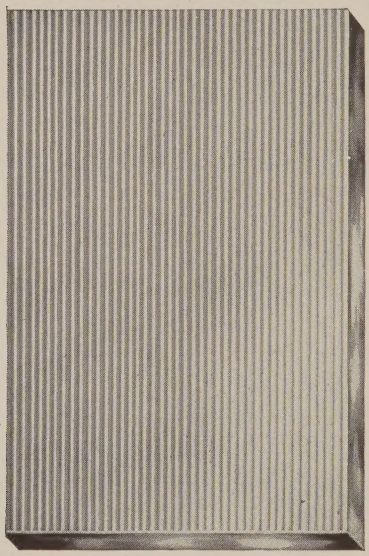
Special Condensation Gutters The curb condensation gutters are proportioned to the area of the skylight and the conditions of the building. Where an extraordinary amount of vapor is present, these gutters may be provided with $\frac{3}{4}$ inch nipples at suitable intervals and these nipples connected by means of wrought galvanized pipe to the nearest roof conductors.

The curb member of the skylight which includes the lower condensation gutter may be made of 20 oz. hard copper and the condensation tubes of 16 oz. hard copper.

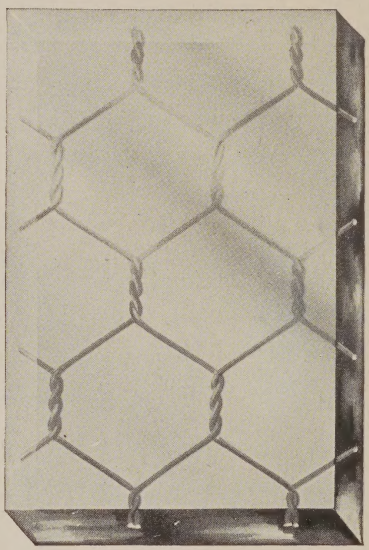
Exposed Members The caps and cross bars may also be made of 16 oz. hard copper, thus making it unnecessary to protect the exposed parts of the skylight with paint.

Painting Skylights made of galvanized material should be painted inside and out a first coat of red lead and a second coat outside after glazing, of metallic brown or green. Red lead should not be left exposed. Additional coats of paint inside may be supplied to harmonize with the interior of the building.

Glass We furnish any kind of glass desired, but either of the following is usually specified:



Three-sixteenths inch Ribbed Glass



One-quarter inch Rough Wire Glass

Glazing We supply pure linseed oil and whiting putty in which the glass should be evenly bedded, and metal spring caps which are secured with brass bolts.

Tie Rods Skylights exceeding ten feet in length should be provided with five-eighths inch tie rods with inside and outside nuts to keep the curb in perfect alignment. Tie rods are not included by us unless specified.

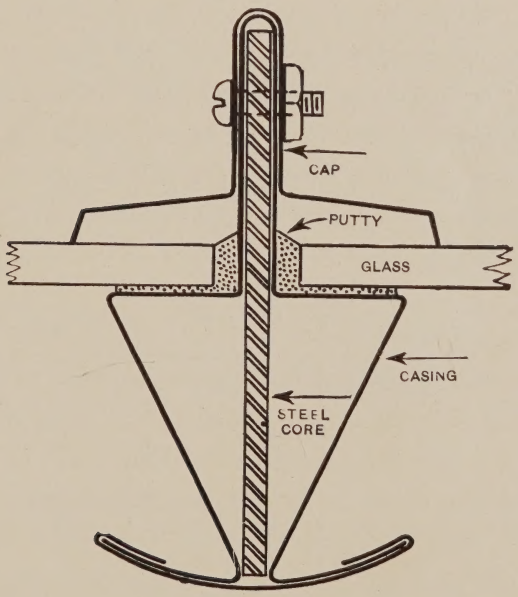
Reinforcement

Specifications for the proper reinforcement of large skylights should be framed to meet actual conditions. We have tabulated the results of a comprehensive series of tests covering a variety of constructions and shall be glad to submit detailed specification for any project not coming within the scope of the following general principles:

All flat or single pitch skylights having rafters eight feet or more in length, and all gable or hip skylights, twelve feet or more in width will have each rafter reinforced with flat steel bars proportioned to the clear span.

Gable and Hip Skylights twelve feet or more in width will have the lower members forming the eave reinforced with steel angles, these angles to be entirely encased in the sheet metal framework and the lower leg punched not to exceed forty-two inches on centers for attaching to the curb with screws, bolts or expansion bolts as required by the construction of the curb. See details pages 7 to 10 inclusive.

Details of construction will be submitted for skylights of extraordinary size.



Type B

ERECTING DIRECTIONS

For the Carpenter

We always make an allowance of 3-16ths of an inch all around the curb for flashing, so that the woodwork for a 4 ft. x 6 ft. skylight should always measure 4 ft. x 6 ft. outside.

The curb should be at least eight inches above roof, and leveled from that for all skylights, excepting those which are intended to pitch with the roof.

Curbs should be two inches thick for openings up to six feet span, and larger openings should be studded and sheathed, and otherwise braced to prevent spreading.

Curbs should be covered with tin or other sheet metal before skylight frames are set.

Setting Up and Glazing

Secure the skylight frame to the curb by screwing through the condensation gutter at the edge of the skylight and solder over all screw heads before glazing.

Skylight frames shipped in sections should be put together on the roof and soldered inside and out before setting on curb.

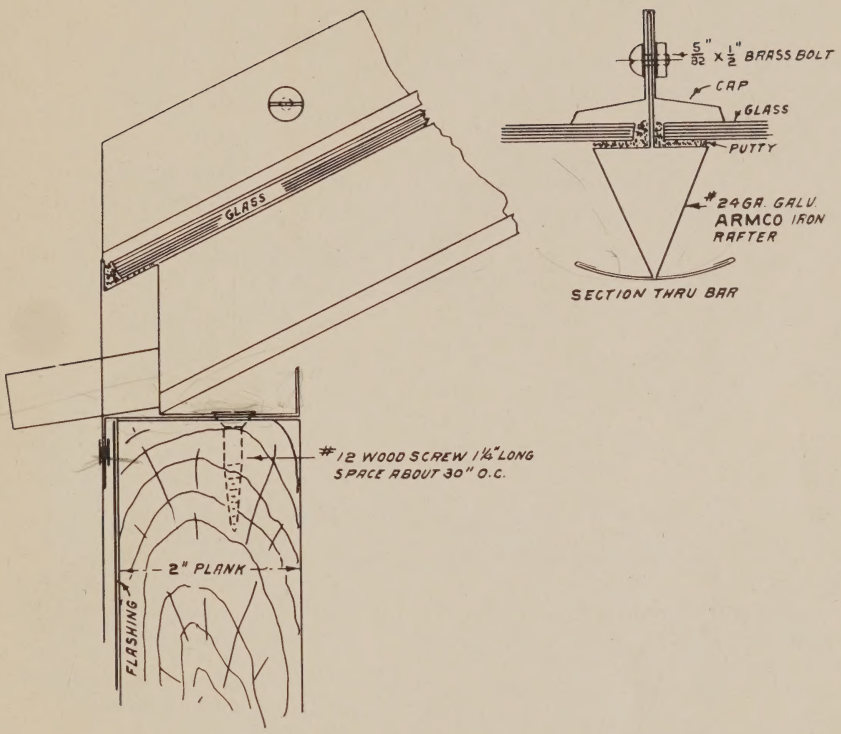
To set glass, remove the caps and put sufficient putty on the rabbets of the bars to bed the glass evenly. Put no putty on top of the glass. Bolt caps.

Get underneath the skylight and remove all superfluous putty, taking special care to leave nothing in the condensation gutters and tubes.

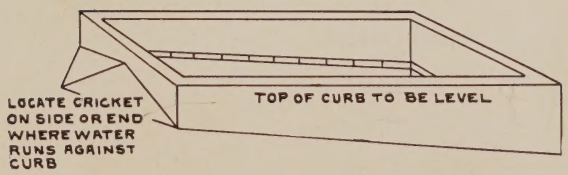
Skylights of ordinary size are set up and fitted before shipping, so that they may be installed by any practical mechanic.

Large skylights should be erected by our workmen. Their familiarity with our construction enables them to overcome a considerable part of their traveling expenses, at the same time enabling us to positively guarantee the installation.

DETAIL



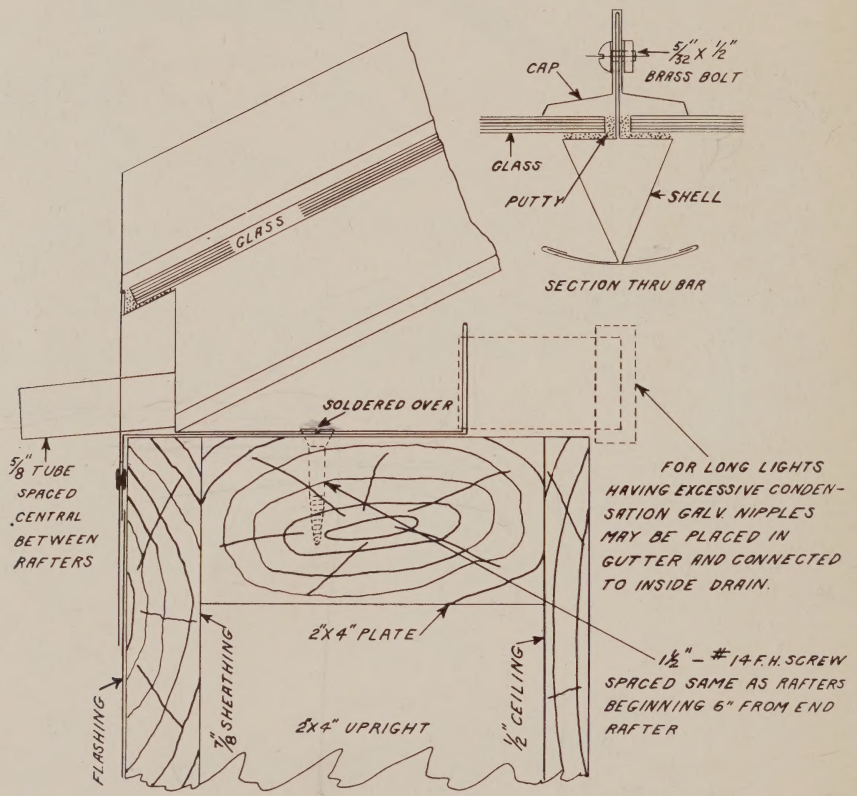
Type F



OUTSIDE DIMENSIONS OF CURB TO BE THE SAME AS SIZE OF SKYLIGHT. WE ALLOW 3-8 INCH FOR CLEARANCE.

DETAIL SHOWING USUAL CURB FRAMING FOR SKYLIGHTS NOT EXCEEDING SIX FEET IN WIDTH

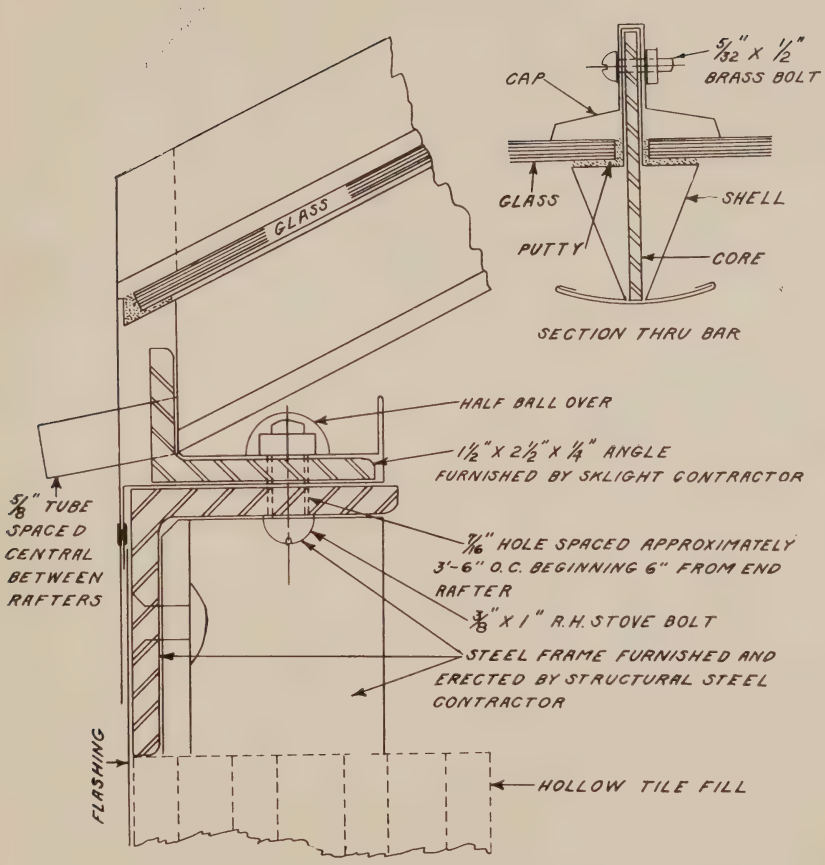
DETAIL



Type C

DETAIL SHOWING CURB FRAMING FOR SKYLIGHTS MORE THAN SIX FEET WIDE

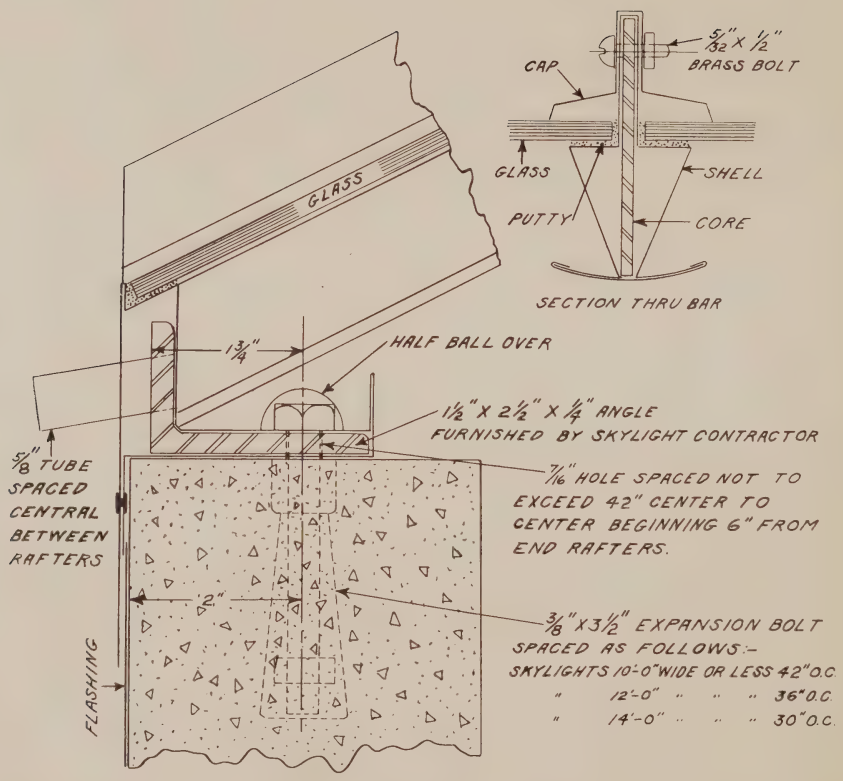
DETAIL



Type D

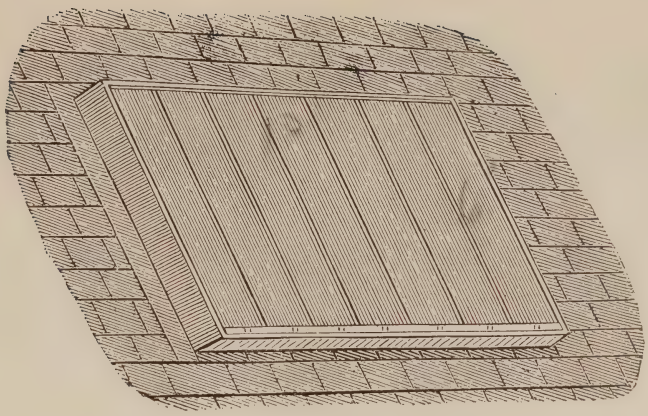
DETAIL SHOWING REINFORCED SKYLIGHT AND METHOD OF ATTACHING TO STEEL CONSTRUCTION

DETAIL



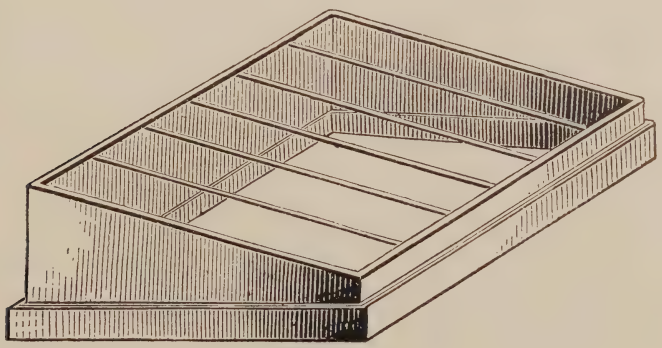
Type E

DETAIL SHOWING REINFORCED SKYLIGHT AND METHOD OF ATTACHING TO REINFORCED CONCRETE



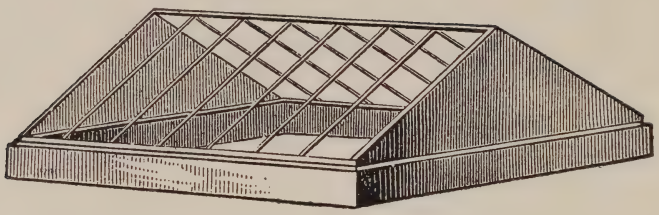
No. 1

Flat Skylight For steep roofs. The curb should be framed square with the roof. This form of skylight may also be used on flat roofs by making the pitch in the curb, which should be six inches rise to twelve inches run.



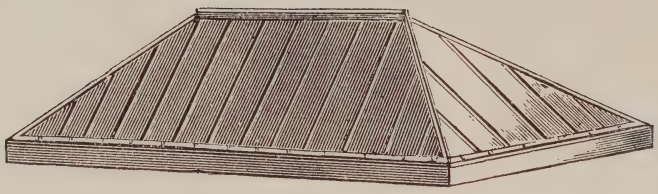
No. 2

Flat Skylight To set on a level curb, the pitch, which is always six inches to the foot, being formed in the back and sides. If the span is more than four feet, it is better to frame curb six inches rise to twelve inches run, and use skylight No. 1.



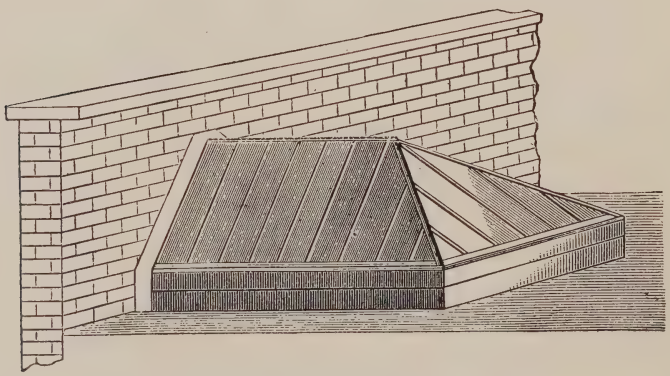
No. 3

Gable Skylight



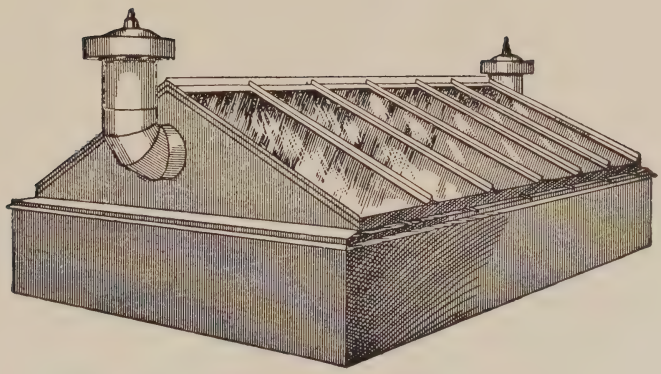
No. 4

Hipped Skylight



No. 5

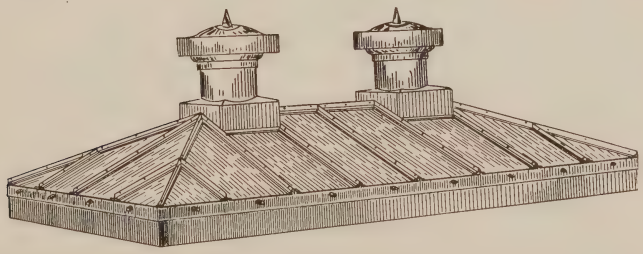
One End Hipped The other flashed against the wall.



No. 7

Gable Skylight with Elbow Ventilators

The Ventilators shown in cut 7 are regulated from the inside with dampers and cords, or registers, with cords and "open and shut" indicators.



No. 9

Hipped Skylight with Ventilators

Ventilators are usually provided with dampers and cords. One or several Ventilators may be used, depending on the length of the skylight ridge.

MONITOR SKYLIGHTS

Monitors with pivoted sash are usually made in the following heights—18 inch, 20 inch, 24 inch and 30 inch from top of curb to eave of skylight, for wood, steel, or reinforced concrete construction.

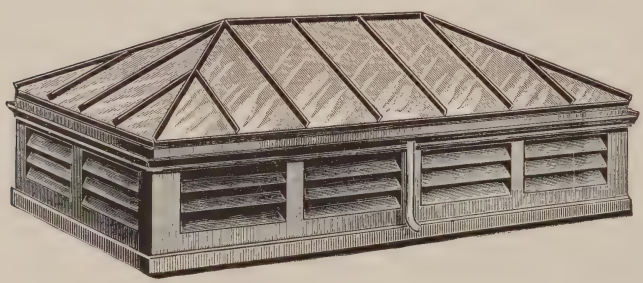
For openings 6 ft x 10 ft. and smaller the monitors may be shipped complete.

For larger openings, requiring angle reinforcement, the steel framing should be erected first and the sheet metal covering put in place on the building. We supply all steel framework above the curb.

For estimates, send outside size of curbs and give style of construction, also height of monitor required.

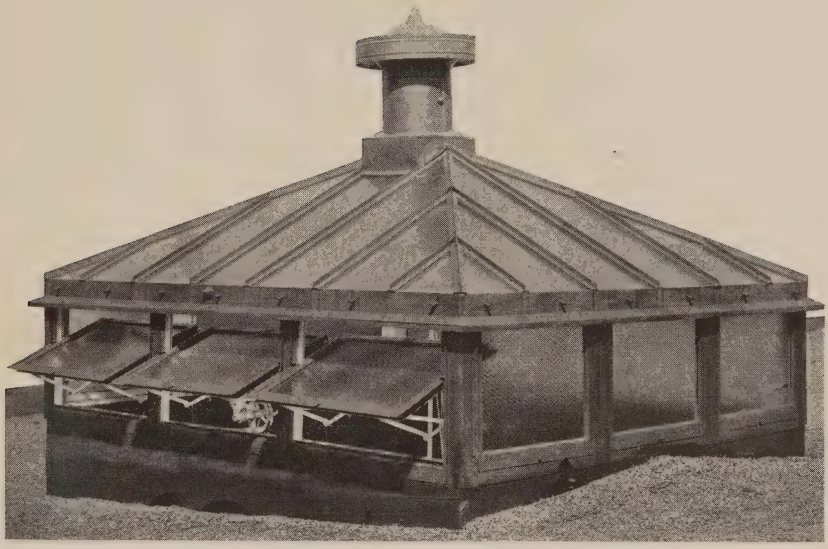
Details submitted for large monitors.

For sash operating devices see pages 24 to 29.



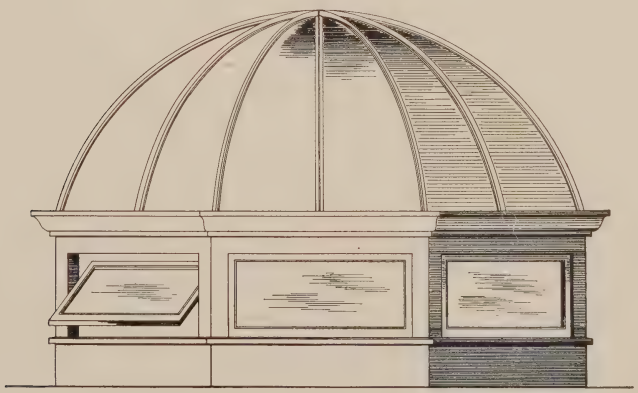
No. 11

Hipped Monitor Skylight with louvres. The louvres are usually made stationary. For styles of louvres see page 21.



No. 13

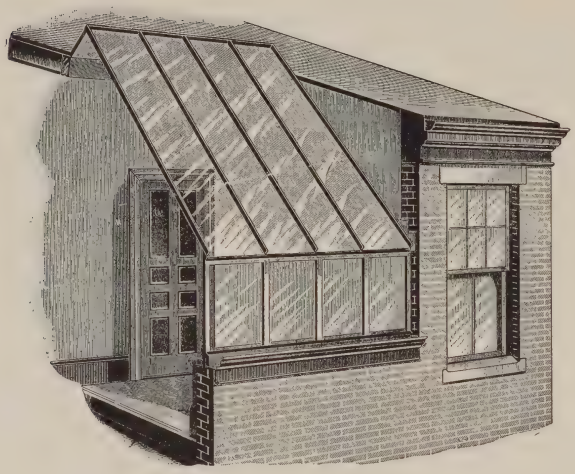
Hipped Monitor Skylight With Pivoted Sash. See pages 24 to 29 for Sash Opening Apparatus.



No. 14

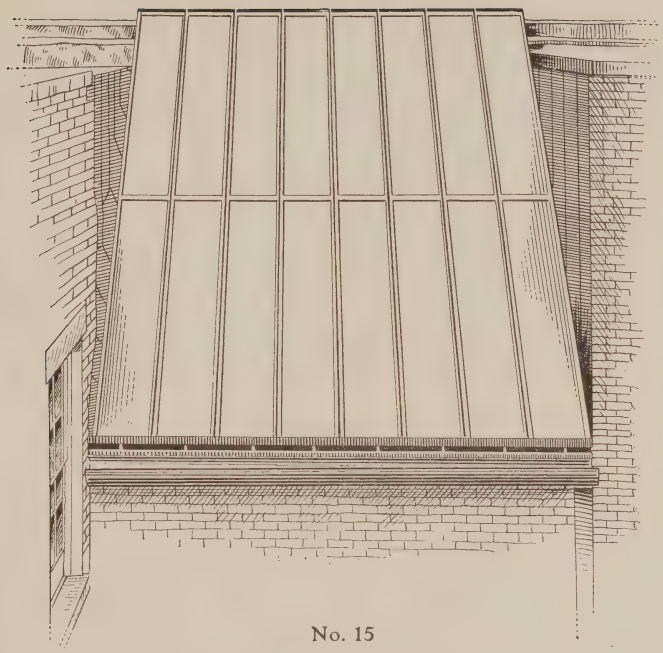
Dome Monitor Skylight For Banking Rooms, Libraries and Museums.

PHOTOGRAPHERS' SKYLIGHTS



No. 12

Photo-Skylight with Vertical Front and Sloping Top. The Vertical Sash may be pivoted if desired. For estimate, send a sketch of the opening giving width, height and length, pitch of skylight and height of vertical light desired; also state whether building is brick or frame construction, and kind of roofing material on adjoining roof.



No. 15

Photo-Skylight No. 15 is the usual construction for photograph galleries. We supply ground, ribbed or wire glass as preferred.

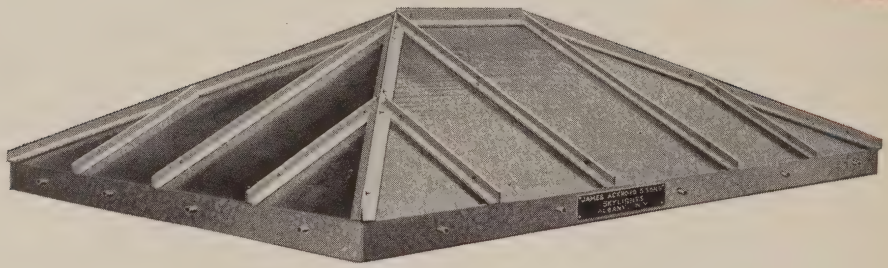
Details for framing will be furnished if desired.

Ventilators similar to cut No. 7 may be placed in the triangular spaces above the adjoining roof if the height of the skylight admits.

For estimate send data indicated on page 16.

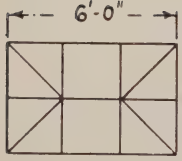
COLUMBIA UNIVERSITY

STOCK SIZES

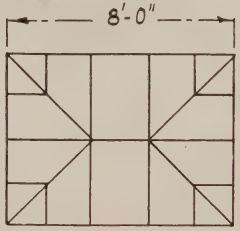


Architects, builders and owners will effect a material saving in cost by using stock size skylights
Sizes as shown are carried in stock

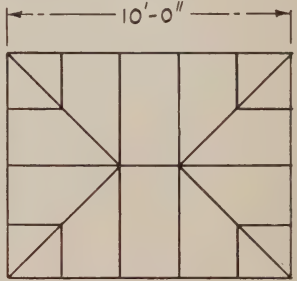
No. 4. HIPPED SKYLIGHTS WITHOUT VENTS



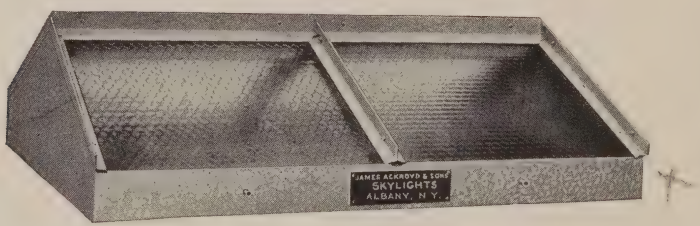
4FT. X 6FT



6FT X 8FT



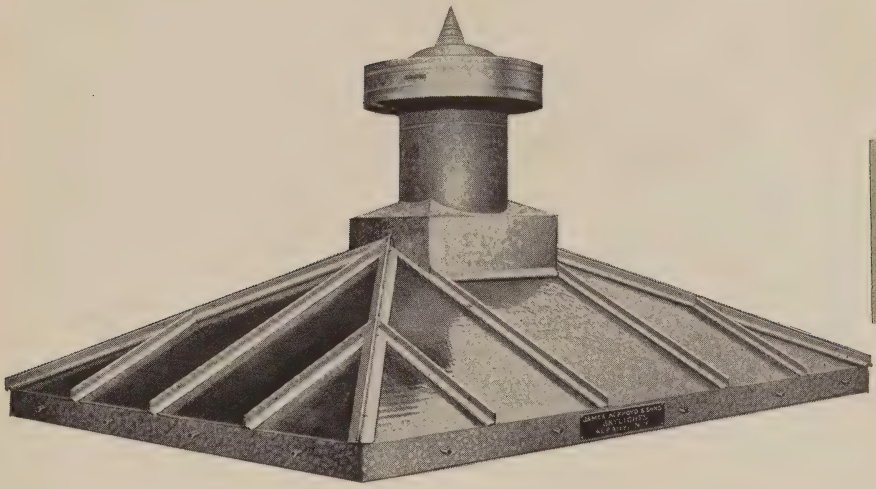
8FT. X 10FT.



No. 3. Gable Skylight 3 ft. x 4 ft.

FOR CURB CONSTRUCTION SEE PAGE 7

STOCK SIZES



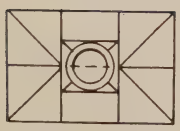
With Ventilator
Ventilators in Stock to fit Skylights as listed

The Frames are made of No. 24 Gauge Galvanized ARMCO INGOT IRON. We include ¼ inch Rough Wire Glass, cut to size and packed separately, pure linseed oil putty for glazing and brass bolts for securing caps.

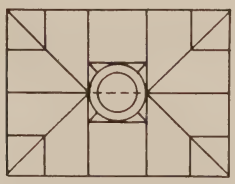
Ventilators are provided with dampers weighted to hang open. The damper is closed by means of a cord. We furnish cord and wall cleat, to which the cord is fastened when damper is closed.

NO. 9. HIPPED SKYLIGHTS WITH GLOBE VENTILATORS

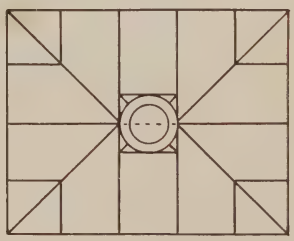
Ventilators may be 12″, 15″, 18″ or 24″ in diameter.



4FT. X 6FT



6FT X 8FT



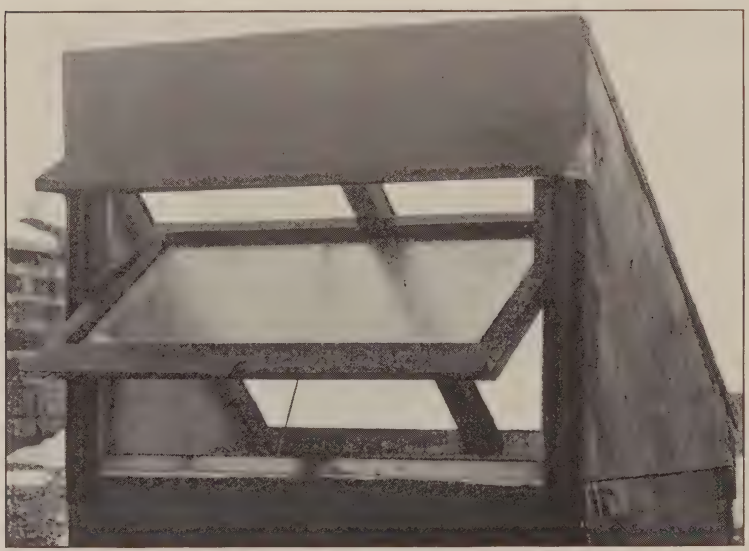
8FT. X 10FT.

VENTILATING SKYLIGHTS FOR TOILET ROOMS

No. 16

Multiple Toilet Monitor

With pivoted sash to set on level curb. For factory use the size must correspond with the number of toilets to comply with State Industrial Codes.

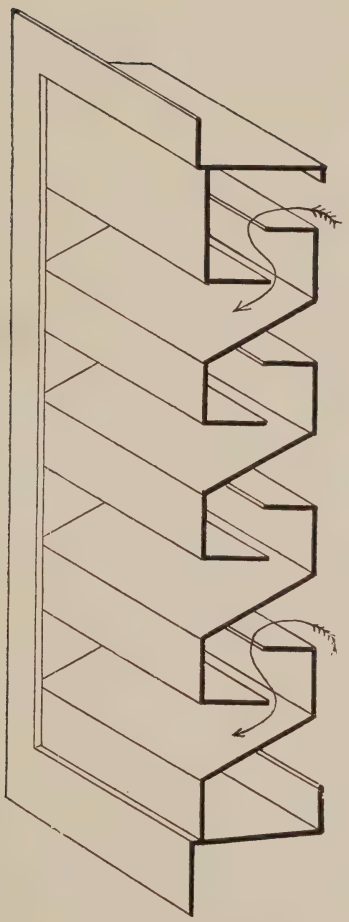


No. 17

Single Toilet Monitor

With single pivoted sash to set on level curb. Curb size 3′ 0″ x 2′ 0″, pivoted sash 2′ 6″ x 1′ 6″ to comply with Albany Building Code requirements for single toilets in dwellings.

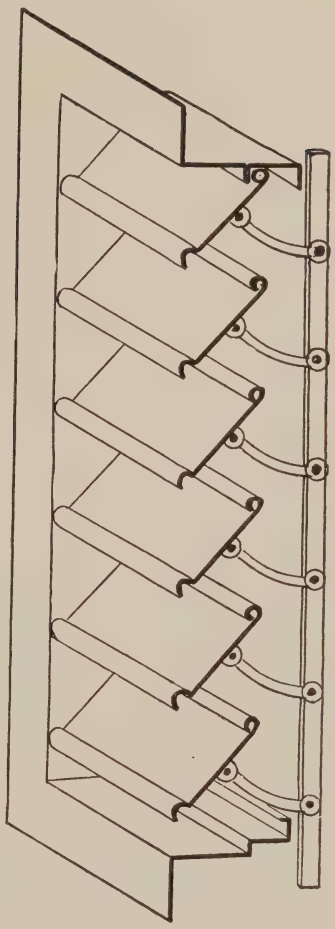
LOUVRE VENTILATORS



No. 105

Stationary Louvres

For Air Shafts and Monitors



No. 106

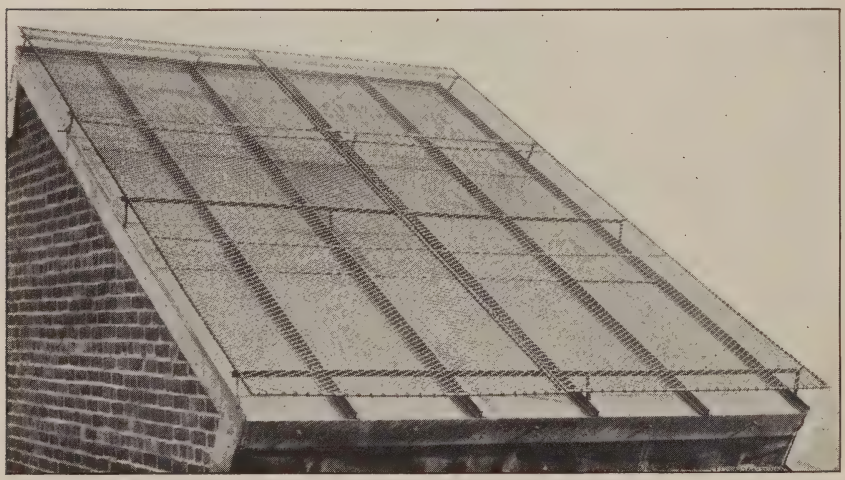
Movable Louvres

May be opened and closed with cords or with self-locking apparatus

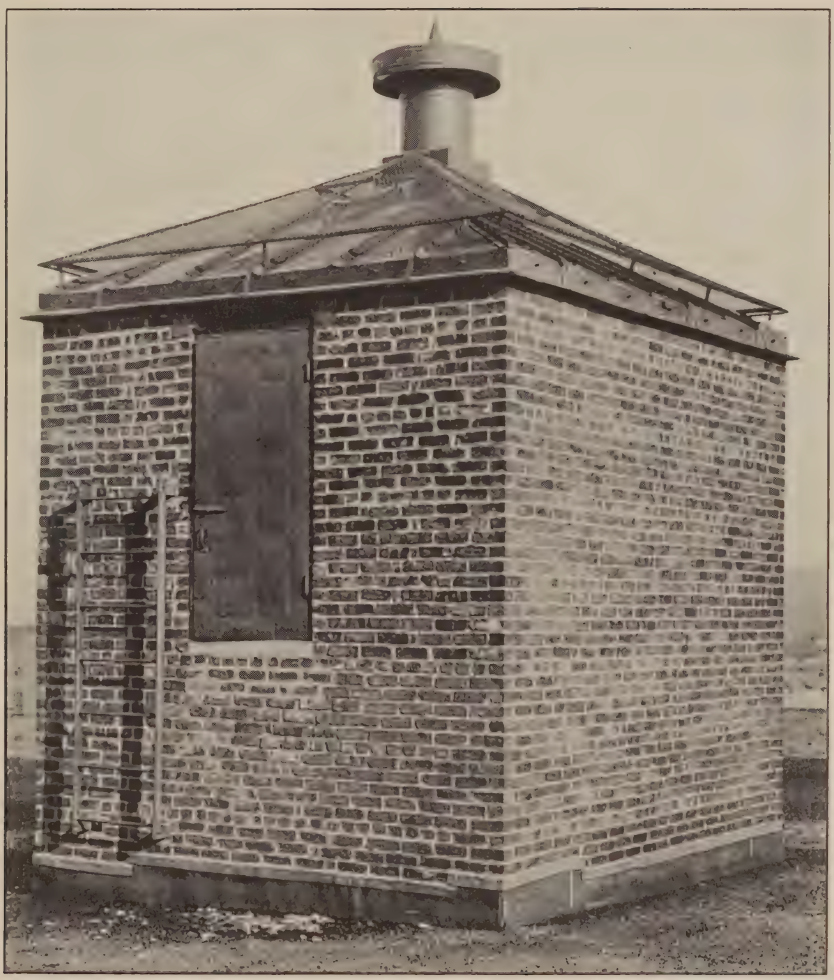
See Cut No. 11, page 14

SPECIAL REQUIREMENTS FOR ELEVATOR SHAFTS AND STAIRWAYS

Underwriters, State Laws and City Building Codes require skylights over elevator shafts and stairways built to meet their specifications. The illustrations on these pages show concrete examples of installations which comply with these rules. We have made a study of the rules of the several governing agencies and can supply skylights to meet the requirements applying to various locations which will comply with the laws and obtain the most favorable insurance rating.



Skylight on Penthouse over Stairway—Note Screen



Elevator Shaft Penthouse

The skylight sets over the walls and has a drip to prevent water washing out mortar. Note that concrete roof and curb are eliminated.

SASH O

Rocker Shaft

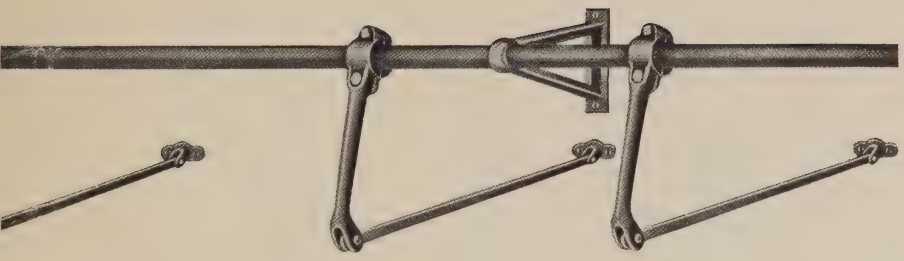
On this page are shown the essential parts of our Rocker Shaft Apparatus and their relative arrangement for operating lines of hinged or pivoted sash.

The Rocker Shaft is usually made of ½″, ¾″ or 1″ steel tubing and extends in front of the sash to be operated.

The Shaft Hangers or Brackets supporting the shaft are ordinarily placed on the window jambs and mullions, but sometimes it is desirable to run the shaft either above or below the sash to be operated. In such cases the shaft hangers can be fastened to the walls or framework of the building. Different conditions govern the distance between hangers, but under ordinary circumstances they should be placed not more than 8 feet apart.

The Worm Gear mounted in a yoke and collar imparts the rotation or rocker motion to the shaft. The motion is transmitted to the sash to be operated by means of arms and rods.

ERATORS



Type Described

Arms and Rods. The arms are attached to the shaft and the rods to the sash by means of small rod hangers or hinges.

Motion is transmitted to the worm gear by means of

(a) **An Operating Rod** consisting of ½″ Pipe or ¾″ solid cold rolled steel terminating in Hand Wheel at operating point, or by

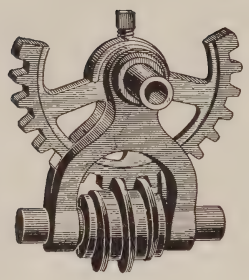
(b) **A Sprocket Wheel** and Hand Chain falling directly beneath the worm gear within reach of the floor.

Universal Joints or Bevel Gears are used to allow the Operating Rod or Shaft to be run in any direction.

The length of a line of ventilation to be controlled by one set of gears depends upon conditions existing in each particular case.

All our castings are made of best gray iron, are consistently smooth and of uniform weight.

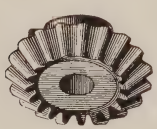
MONITOR SASH GEARING



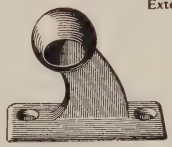
Lifting Power

Pole Hook

Extensions



Mitre Gear



Bracket

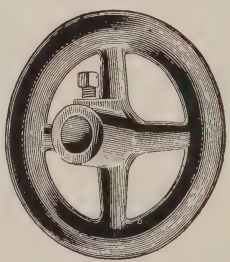
Arm

Hinge

Universal Joint

Handle

Collar



Hand Wheel

WE CAN SUPPLY THESE PARTS ON SHORT NOTICE

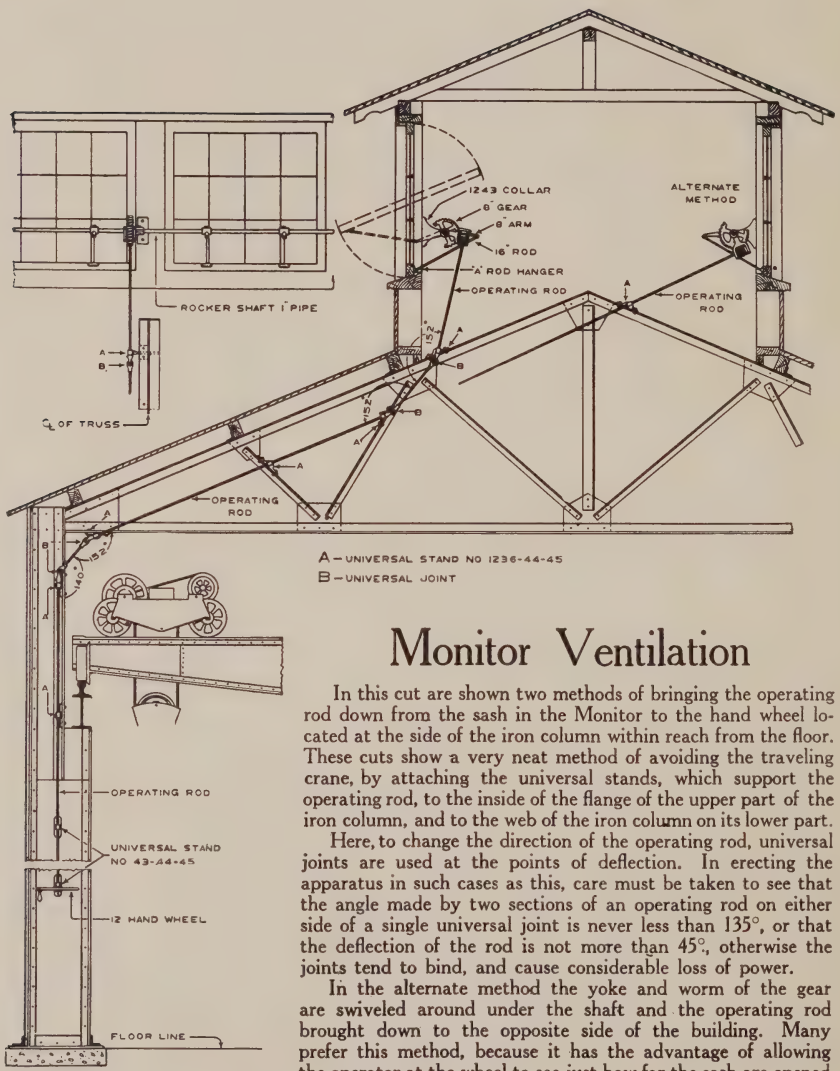
PRICE LIST

THREE-EIGHTS AND HALF-INCH PIPE	
Lifting Powers	$1.65
Extensions	.85
Arms, 18 inch	1.20
Arms, 12 inch	.60
Arms, 8 and 9 inch	.40
Arms, 5¾ inch	.30
Arms, 3 and 4½ inch	.30
Brackets, 12 inch	.90
Brackets, 8 inch	.40
Brackets, 5 and 6 inch	.27
Brackets, 3, 3½, 4 inch	.22
Handles	.18
Collars	.12
Hinges	.10
Hand Wheels, 12 inch	3.40
Hand Wheels, 9 inch	2.00
Hand Wheels, 6 inch	.90
Universal Joints	3.00
Mitre Gears, each	.75
Pole Hooks	.60

THREE-FOURTHS AND ONE INCH PIPE	
Lifting Powers	4.00
Extensions	1.35
Arms, 21 inch	2.00
Arms, 18 inch	1.75
Arms, 9 and 12 inch	.90
Brackets, 12 inch	1.10
Brackets, 5 and 6 inch	.60
Brackets, 4 and 4½ inch	.60
Collars	.30
Hinges	.15
Handles	.45
Hand Wheels, 12 inch	3.40
Hand Wheels, 9 inch	2.00
Hand Wheels, 7 inch	1.65
Universal Joints	3.00
Mitre Gears, each	1.35
Chain Lift and 9 inch Wheel	6.00

CONNECTIONS AND PIPE FURNISHED TO SUIT REQUIREMENTS

PRICES ON APPLICATION



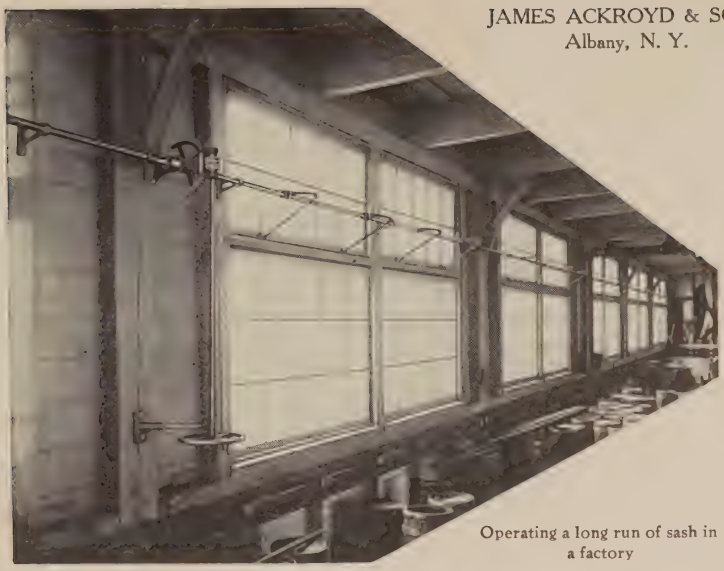
Monitor Ventilation

In this cut are shown two methods of bringing the operating rod down from the sash in the Monitor to the hand wheel located at the side of the iron column within reach from the floor. These cuts show a very neat method of avoiding the traveling crane, by attaching the universal stands, which support the operating rod, to the inside of the flange of the upper part of the iron column, and to the web of the iron column on its lower part.

Here, to change the direction of the operating rod, universal joints are used at the points of deflection. In erecting the apparatus in such cases as this, care must be taken to see that the angle made by two sections of an operating rod on either side of a single universal joint is never less than 135°, or that the deflection of the rod is not more than 45°, otherwise the joints tend to bind, and cause considerable loss of power.

In the alternate method the yoke and worm of the gear are swiveled around under the shaft and the operating rod brought down to the opposite side of the building. Many prefer this method, because it has the advantage of allowing the operator at the wheel to see just how far the sash are opened at any time.

JAMES ACKROYD & SONS
Albany, N. Y.

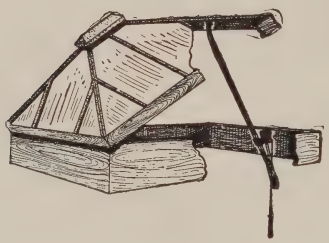


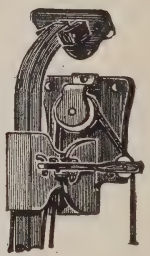
Operating a long run of sash in a factory

No. 111—HAND WHEEL AND GEAR APPARATUS

MONITOR SASH OPERATING APPARATUS

THE G. B. SKYLIGHT LIFT





The G. B. Skylight Lift enables one to raise or lower a small skylight with ease. It is always locked automatically. Our special Corner Hinges should always be used in connection with the lift, as they strengthen the corners of the skylight and insure an easy action.

DIRECTIONS

Lift must be attached to curb absolutely plumb.

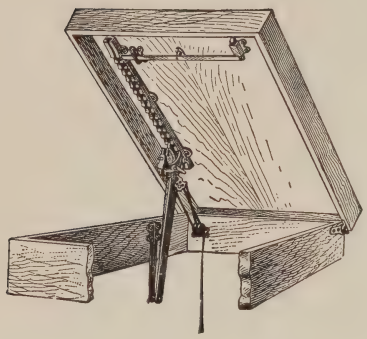
Stand facing the lift to operate.

To raise or lower skylight simply pull the cord downward.

To lock at any desired point, pull the cord outward.

IT LOCKS AUTOMATICALLY

THE G. B. SCUTTLE LIFT



Directions for Attaching Fasten Hinges to Cover and Frame, then screw and bolt hollow Ratchet-Box on Scuttle-Cover ¾ inch from front and 1¼ inch from inside of Frame. Screw Bolt ¾ inch from front and distance of Opening-Rod from Ratchet-Box; screw and Bolt Bracket on inside of Frame 22 inches from front to centre of Bracket.

Insert Lever in Ratchet-Box and bolt to Bracket. Adjust and screw Pivot and Guide of Bolt-Rod to Cover so that Pawls on Lever will push same forward to open Bolt; screw on nosings to suit Bolts.

IT LOCKS AUTOMATICALLY

SAWTOOTH SKYLIGHTS

Our long experience in designing and building large skylights has enabled us to perfect a construction for the Sawtooth form of lighting, embodying all the indispensable features which have made our skylights the accepted standard by many architects and engineers.

The Special Features of our Construction Are:

STRENGTH.
ABSOLUTE PROVISION FOR CONDENSATION.
RESISTANCE TO VIBRATION.
RESISTANCE TO CONTRACTION AND EXPANSION.
RESISTANCE TO WIND PRESSURE.
PROVISION FOR VENTILATION.
WEATHER-PROOF QUALITIES.

The Results to the Owner Are:

LOW COST OF MAINTENANCE.
MINIMUM BREAKAGE OF GLASS.
MAXIMUM OF LIGHT.
NO DRIPPING FROM CONDENSATION.

Adapted to

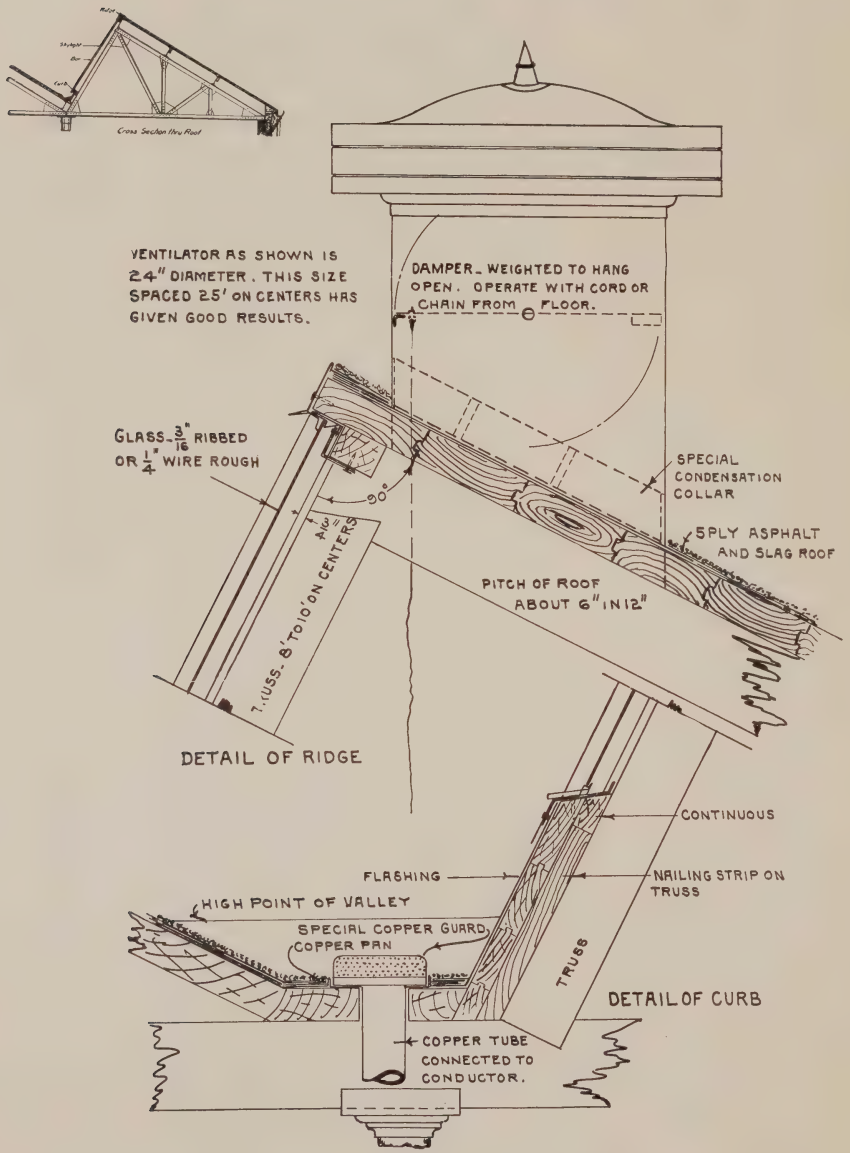
WOOD CONSTRUCTION.
STEEL CONSTRUCTION.
REINFORCED CONCRETE CONSTRUCTION.

SAWTOOTH SKYLIGHTS WITH VENTILATING SASH
PLATTSBURGH, N. Y.

1820 Lineal Feet Re-inforced Sawtooth Skylights, 7 Feet High. Total Area 12,740 Square Feet.
301 Sash Operated by Worm and Gear. 2800 Square Feet in Flat Skylights.

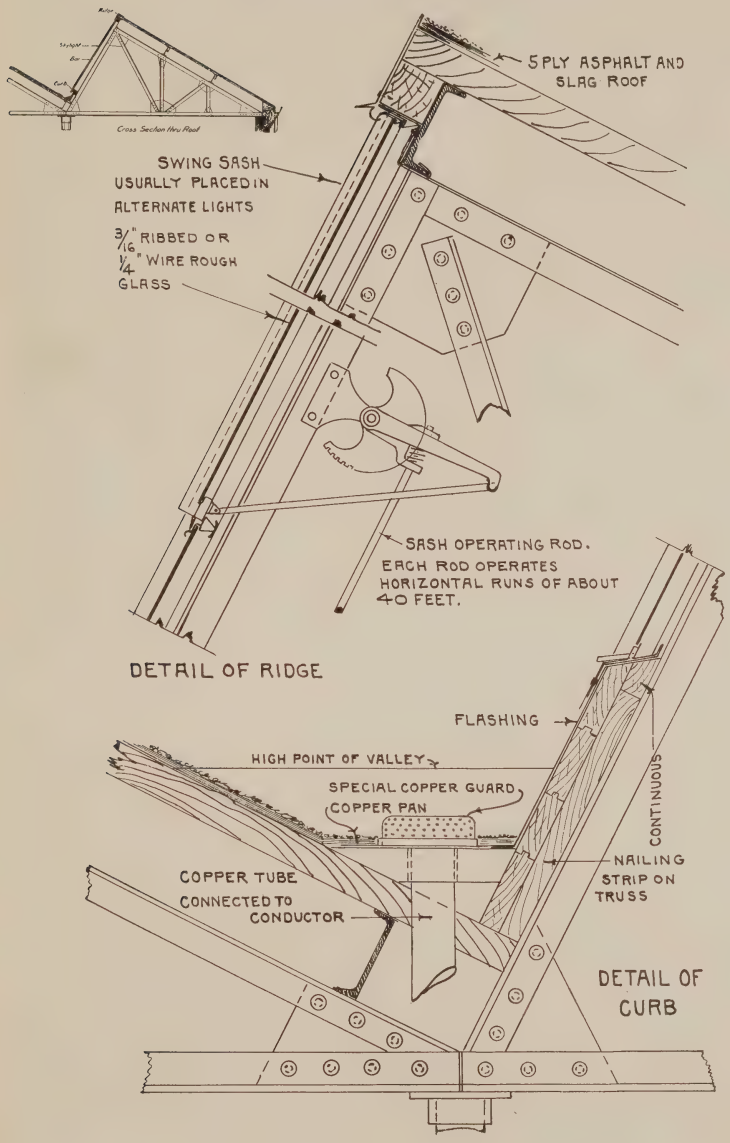
JAMES ACKROYD & SONS
Albany, N. Y.

SAWTOOTH SKYLIGHTS


VENTILATOR AS SHOWN IS 24" DIAMETER. THIS SIZE SPACED 25' ON CENTERS HAS GIVEN GOOD RESULTS.
DAMPER - WEIGHTED TO HANG OPEN. OPERATE WITH CORD OR CHAIN FROM FLOOR.
GLASS - 3/16" RIBBED OR 1/4" WIRE ROUGH
90°
SPECIAL CONDENSATION COLLAR
5 PLY ASPHALT AND SLAG ROOF
PITCH OF ROOF ABOUT 6" IN 12"
TRUSS - 8' TO 10' ON CENTERS
DETAIL OF RIDGE
CONTINUOUS
FLASHING
NAILING STRIP ON TRUSS
HIGH POINT OF VALLEY
SPECIAL COPPER GUARD
COPPER PAN
TRUSS
DETAIL OF CURB
COPPER TUBE CONNECTED TO CONDUCTOR.

TYPICAL DETAILS FOR WOOD CONSTRUCTION

SAWTOOTH SKYLIGHTS

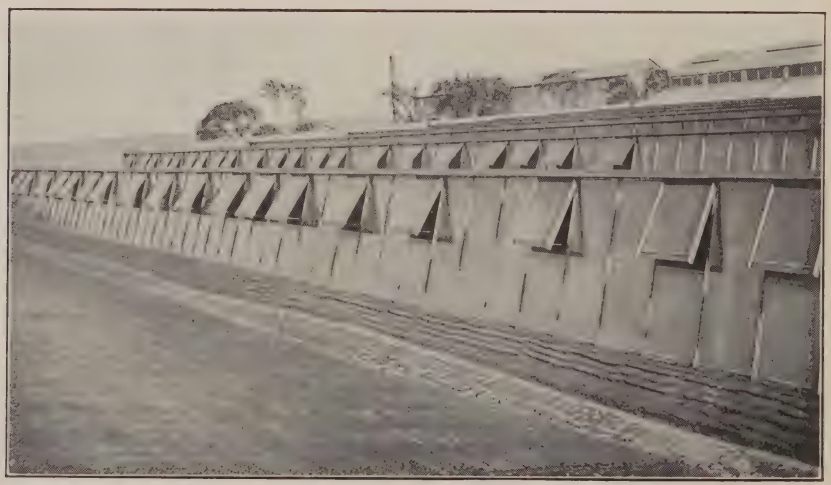

5 PLY ASPHALT AND SLAG ROOF
SWING SASH USUALLY PLACED IN ALTERNATE LIGHTS
3/16" RIBBED OR 1/4" WIRE ROUGH GLASS
SASH OPERATING ROD. EACH ROD OPERATES HORIZONTAL RUNS OF ABOUT 40 FEET.
DETAIL OF RIDGE
FLASHING
HIGH POINT OF VALLEY
SPECIAL COPPER GUARD
COPPER PAN
CONTINUOUS
NAILING STRIP ON TRUSS
COPPER TUBE CONNECTED TO CONDUCTOR
DETAIL OF CURB

TYPICAL DETAILS FOR STEEL CONSTRUCTION

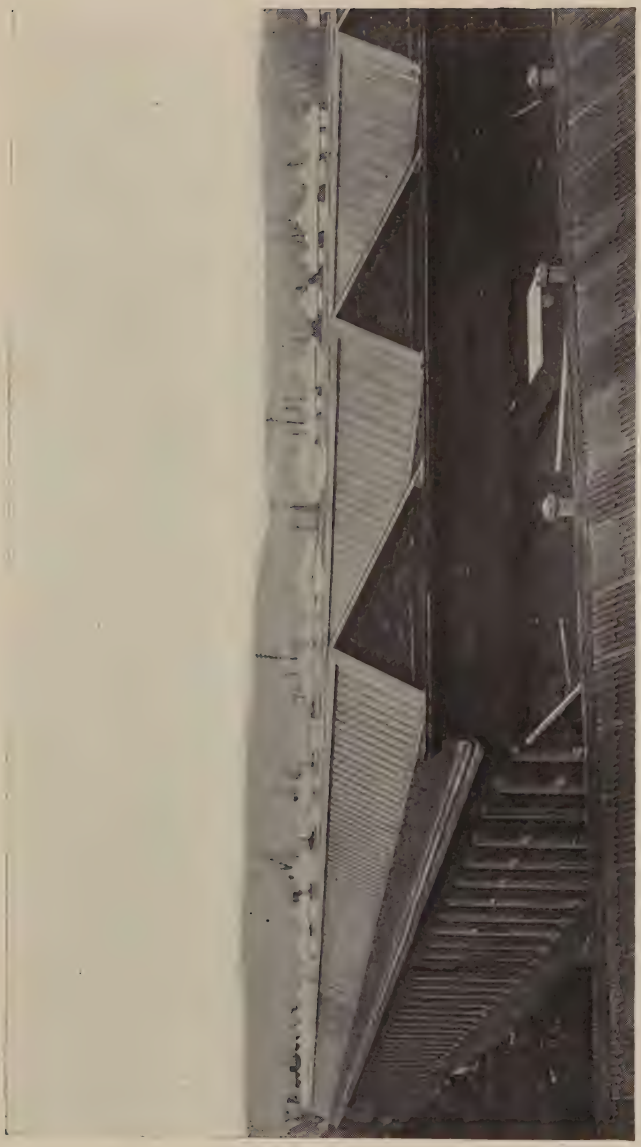
JAMES ACKROYD & SONS
Albany, N. Y.

SAWTOOTH SKYLIGHTS

INTERIOR

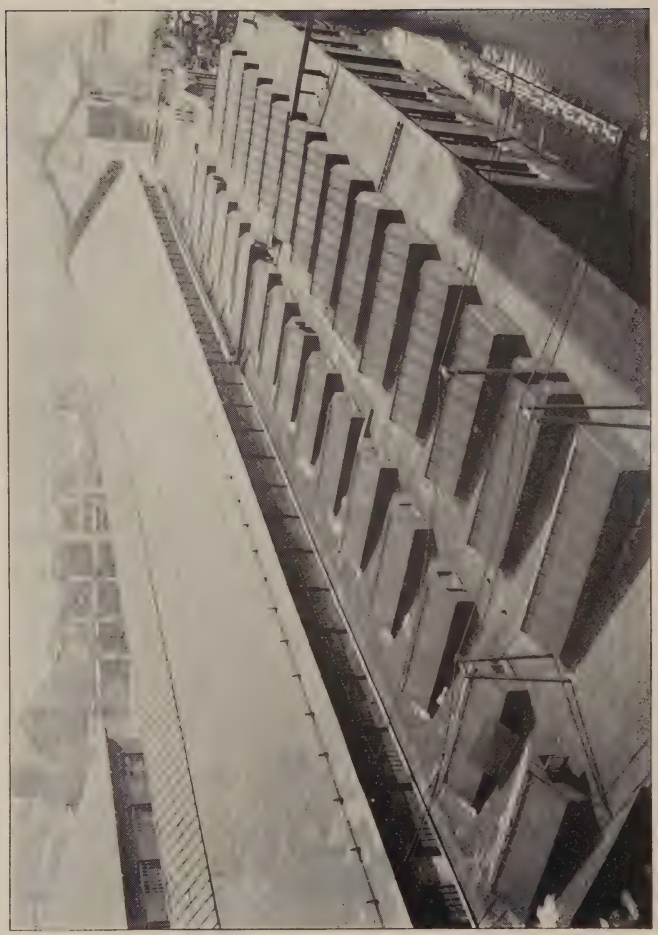


EXTERIOR
View of Machine Shop—Plattsburgh, N. Y.



THE LIBRARY BUREAU, ILION, N. Y.
2544 Lineal Feet Sawtooth Skylights, 5 Feet 1½ Inches High. Total Area 13,038 Square Feet.
100 24-inch Ventilators

JAMES ACKROYD & SONS
Albany, N. Y.



BOLT SHOP, AMERICAN LOCOMOTIVE CO., SCHENECTADY, N. Y.
The small skylights contain 136 square feet each

WE HAVE EXCEPTIONAL FACILITIES FOR LARGE WORK

CARPENTER SHOP, AMERICAN LOCOMOTIVE CO., SCHENECTADY, N. Y.
Skylight 16 x 240 feet—3840 square feet

OUR SKYLIGHTS STAND THE TEST OF TIME

WHEEL SHOP AMERICAN LOCOMOTIVE CO., SCHENECTADY, N. Y.

Skylight 4800 Square Feet

OUR SKYLIGHTS STAND VIBRATION CAUSED BY CRANES

MARQUEES

This form of canopy has two desirable features. It marks the entrance with a character of its own and thus increases the architectural effect and it affords desirable protection to the vestibule from the elements.

We have no standard designs. Every Marquee we construct is specially designed to meet the requirements of the situation.

AMERICAN THEATRE, TROY, N. Y.

M. F. Cummings & Son, Architects
Troy, N. Y.

JAMES ACKROYD & SONS
Albany, N. Y.

OFFICE MARQUEE

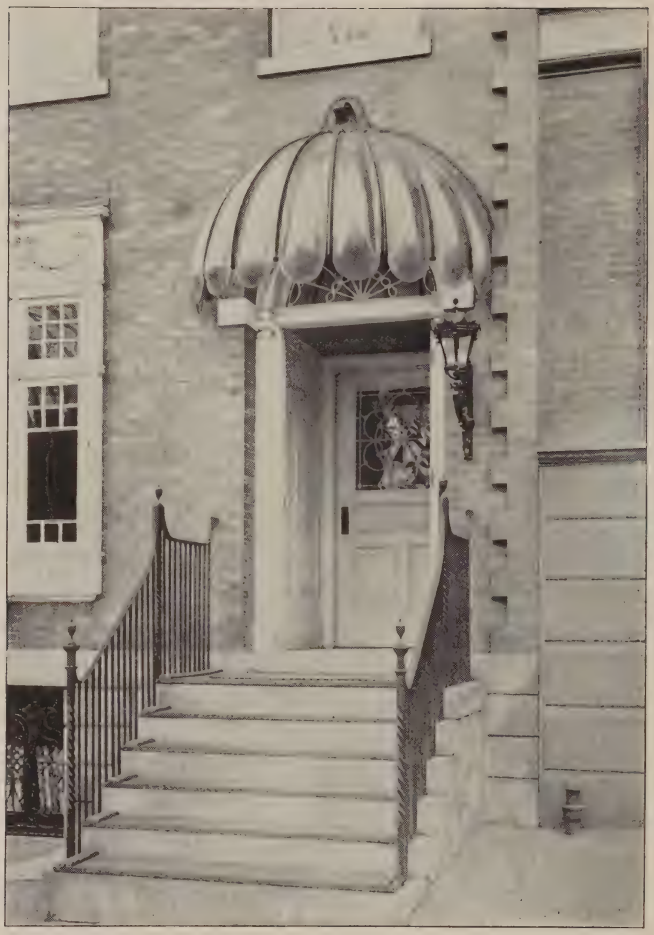
Charles G. Ogden, Architect

LET US QUOTE ON SPECIAL DESIGNS

JAMES ACKROYD & SONS
Albany, N. Y.

CONGRESS THEATRE—SARATOGA SPRINGS, N. Y.

LET US QUOTE ON SPECIAL DESIGNS



DOORWAY MARQUEE

Residence Albany, N. Y.

Mr. Marcus T. Reynolds, Architect

LET US QUOTE ON SPECIAL DESIGNS

ST. ANDREW'S SOCIETY, ALBANY, N. Y.

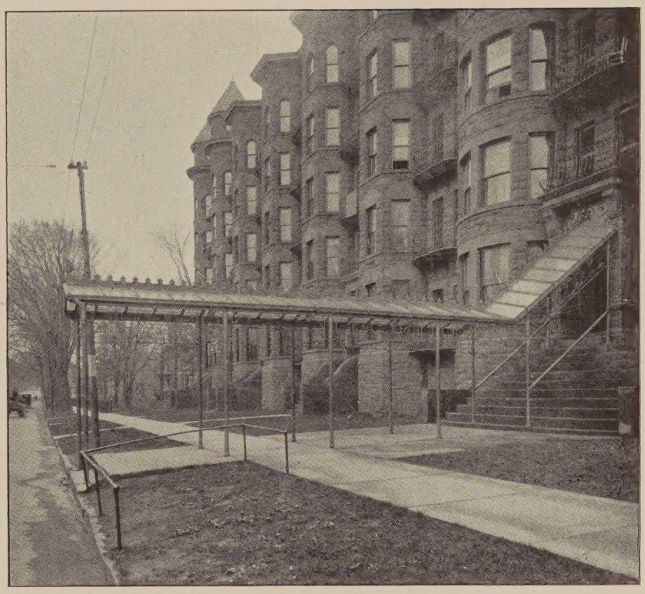
Merrick & Pember, Architects

LET US QUOTE ON SPECIAL DESIGNS

STORE AT HERKIMER, N. Y.

The use of a marquee to mark the store front gives distinction and avoids the use of awnings. The glass top does not darken the windows while affording summer and winter protection.

LET US QUOTE ON SPECIAL DESIGNS



MAIN ENTRANCE CANOPY

Apartment House. Utica, N. Y.

Design and Wrought Iron by James McKinney & Son

LET US QUOTE ON SPECIAL DESIGNS

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STEEL SECTION SKYLIGHTS

For buildings where the skylights are especially exposed to steam and gases we have developed a special construction with frame and rafters of SOLID STEEL SECTIONS.

This construction embodies all the condensation-proof features of our hollow metal types.

Details will be furnished on application.

OUR OTHER LINES ARE

Roofing

We are general contractors for roofing and sheet metal work in the territory embracing Eastern New York, Vermont and Western Massachusetts.

Metal Cornices

A separate catalog will be mailed on request. We are glad to quote on special designs.

Hollow Metal Windows

For all classes of buildings, in galvanized Steel and copper.

Steel Rolling Doors—Kinnear Mfg. Co.

For warehouses, factories, office and store buildings.

Steel Sash—Bayley-Springfield

For all classes of industrial buildings, combining strength and durability with maximum light and ventilating area. Separate catalog on request.
Stock sizes of sash and glass in Albany for immediate shipment.

Estimates

Plans sent us by mail or express will be estimated and returned promptly.